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Docket No.: 1691-0214PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Tomohiro KONO et al.

Application No.: 10/566,724

Confirmation No.: 9720

Filed: February 2, 2006

Art Unit: N/A

For: METHOD OF CONSTRUCTING NUCLEAR-  
TRANSPLANTED EGG,  
PARTHENOGENETIC EMBRYO AND  
PARTHENOGENETIC MAMMAL

Examiner: Not Yet Assigned

**LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Subsequent to the filing of the above-identified application on February 2, 2006, attached hereto is an English translation of the International Preliminary Examination Report (Form PCT/IPEA/409) that should be made of record in the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any


Application No.: 10/566,724

Docket No.: 1691-0214PUS1

additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: 6/13/06

Respectfully submitted,

By  #42.874  
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Attachment(s)

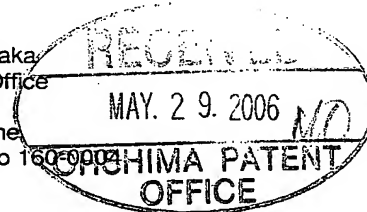
From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

OHSHIMA, Masataka  
Ohshima Patent Office  
Fukuya Bldg.  
3, Yotsuya 4-chome  
Shinjuku-ku, Tokyo 160-0004  
JAPON



Date of mailing (day/month/year) 18 May 2006 (18.05.2006)		
Applicant's or agent's file reference G2TND	IMPORTANT NOTIFICATION	
International application No. PCT/JP2004/011491	International filing date (day/month/year) 04 August 2004 (04.08.2004)	
Applicant TOKYO UNIVERSITY OF AGRICULTURE EDUCATIONAL CORPORATION et al		

## 1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Masashi Honda
Facsimile No.+41 22 740 14 35	Facsimile No.+41 22 338 70 10

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference G2TND	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/JP2004/011491	International filing date ( <i>day/month/year</i> ) 04 August 2004 (04.08.2004)	Priority date ( <i>day/month/year</i> ) 05 August 2003 (05.08.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant TOKYO UNIVERSITY OF AGRICULTURE EDUCATIONAL CORPORATION		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input checked="" type="checkbox"/> | Box No. II   | Priority  |
| <input checked="" type="checkbox"/> | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 08 May 2006 (08.05.2006)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin: 10px 0;">Masashi Honda</div> Telephone No. +41 22 338 70 10

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**G2TND**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2004/011491**

International filing date (day/month/year)

**04.08.2004**

Priority date (day/month/year)

**05.08.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**TOKYO UNIVERSITY OF AGRICULTURE EDUCATIONAL CORPORATION**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/011491

Box No. I      Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/011491

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	1-7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
<p>Document 1: SOTOMARU, Y et al., Unregulated expression of the imprinted genes H19 and Igf2r in mouse uniparental fetuses. J Biol Chem. 2002 Apr 5, vol.277 (14), pp.12474-12478</p> <p>Document 2: KONO, T et al., Mouse parthenogenetic embryos with monoallelic H19 expression can develop to day 17.5 gestation. Dev Biol. 2002 Mar 15, vol.243 (2), pp.294-300</p> <p>Document 3: SOTOMARU, Y et al., Disruption of imprinted expression of U2afbp-rs/U2af1-rs1 gene in mouse parthenogenetic fetuses. J Biol Chem. 2001 Jul 13, vol.276 (28), pp.26694-26698</p> <p>Document 4: OBATA, Y et al., Disruption of primary imprinting during oocyte growth leads to the modified expression of imprinted genes during embryo genesis. Development. 1998 Apr, vol.125 (8), pp.1553-1560</p> <p>Document 5: ESCRIBA, MJ et al., Reconstruction of the heteroparental diploid condition in rabbit zygotes by nuclear transfer. Theriogenology. 2001 Feb 1, vol.55 (3), pp.771-784</p> <p>Document 6: KONO, T et al., Genome imprinting in oogenesis process and embryogenesis. Protein, nucleic acid, enzyme. 1998, vol.43 (4), pp.565-572</p> <p>Above mentioned documents 1-5 cited in the ISR neither describe nor suggest to using an ovum which suffers a loss in imprinting gene that subjects acquired gene decoration in spermatogenesis process as genesis follicular ovum or MII period ovum, in a nucleus transplantation egg having a haploid genome set of a genesis follicular ovum origin and a haploid genome set of a genesis MII period ovum. Meanwhile, in the subject matters described in claims 1-37, by taking such a configuration, noticeable effect that said nucleus transplantation egg having growth ability to adult is provided.</p> <p>Accordingly, the subject matters of claims 1-7 appear to be novel and to involve an inventive step.</p>			

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/011491

Box No. VIII      Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

In description of the invention, obtaining the nucleus transplantation egg having growth ability to adult, only in the case of losing H19 gene as imprinting gene that subjects acquired gene decoration in spermatogenesis process is disclosed.

However, in the case of losing any imprinting gene that subjects acquired gene decoration in spermatogenesis process besides H19 gene, there is not theoretical evidence concerning obtaining the nucleus transplantation egg having growth ability to adult as in the case of H19 gene.